

**UNIVERSITY OF MICHIGAN  
Education and Research Center  
for Occupational Health and  
Safety Engineering**

**SUMMARY ANNUAL REPORT**

**July 1, 2008 – June 30, 2009**

**NIOSH Training Grant  
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**Submitted by:**

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The University of Michigan Center for Occupational Health and Safety Engineering (COHSE), a NIOSH Education and Research Center (ERC) (the 'Center'), has been continuously funded by NIOSH since its establishment in 1982. The mission of the Center is to serve the region, nation, and world as a center of excellence for research and graduate education in Occupational Health and Safety. We maintain academic and research programs in the disciplines of Industrial Hygiene (IH), Occupational Health Nursing (OHN), and Occupational Safety Engineering and Ergonomics (OSE), Occupational Epidemiology (OE), and Hazardous Substances Academic Training (HSAT). Other programs in the Center include Continuing Education (CE), Outreach, Pilot Project Research Training (PPRT), and Targeted Research Training (TRT). We provide broad-based, interdisciplinary academic training in occupational health to ensure that graduates are qualified to pursue careers and assume leadership roles in the practice of occupational health and safety.

## Highlights of past year (July 2008 through June 2009)

### Faculty Promotions, Development and Awards

The productivity and quality of our ERC faculty has been outstanding over the past year:

- **Dr. Richard Hughes**, an Associate Professor in the University of Michigan's Department of Orthopedic Surgery, was appointed as an Associate Professor of Industrial and Operations Engineering in September 2008.
- **Professor Thomas J. Armstrong** was elected a Fellow of the International Ergonomics Association
- **Associate Professor Yili Liu** was selected by Industrial and Operations Engineering (IOE) students for the IOE Outstanding Professor Award
- **Professor W. Monroe Keyserling**, along with **Ph.D. student Neal Wiggermann**, received the best ergonomics speaker award for their paper on inter-worker variability presented at The American Industrial Hygiene Conference and Exposition in Toronto
- **Adjunct Professor Paul A. Green** served as President of the Human Factors and Ergonomics Society
- **Adjunct Professor Paul Adams** served as Past-president of the Board of Certified Safety Professionals.
- Center Director **Professor Thomas Robins** and HSAT and PPRT Director **Professor Stuart Batterman** were appointed as Honorary Professors, Department of Occupational and Environmental Health, Medical School, University of KwaZulu-Natal, Durban, South Africa.
- **Dr. Marjorie McCullagh** began as the new director of the OHN program following a nationwide search. She is a graduate of our U of M OHN Program, and her research interests focus on occupational noise-induced hearing loss.
- **Professor Edward Zellers** delivered invited talks at the NIOSH Workshop on Direct Reading Exposure Assessment Methods (DREAM) (November, 2008), Electrochemical Society Meeting (May, 2009), and the Canadian Chemical Conference (June, 2009) concerning his research on microanalytical systems for airborne contaminants.
- Center Director **Professor Thomas Robins** serves as Principal Investigator on a newly funded 5 year Millennium Promise Grant addressing research training capacity development on occupational and environmentally related lung diseases in the Southern African Development Community.
- **Professor Howard Hu** was selected to received the 2009 Linus Pauling Award for lifetime achievement from the American College for the Advancement of Medicine and was appointed to the Board of Environmental Studies and Toxicology of the National Academy of Sciences.
- **Professor Marie O'Neill** received the NIEHS Outstanding New Environmental Scientist (ONES) R01 award in September of 2008 and was elected to a 3 year term as a Councilor for the International Society for Environmental Epidemiology.

- **Professor Sung Kyun Park** received an NIEHS K-grant (K01ES016587; Environment, Novel Aging Outcomes, and Genetics).

**Student enrollment and graduation, continuing education programs offered and attended, PPRT projects funded.**

<b>Enrollment</b>				
	<b>MPH</b>	<b>MS</b>	<b>PhD</b>	<b>Total</b>
<b>IH</b>	9	2	10	21
<b>HSAT</b>	5	1		6
<b>OE</b>	6		7	13
<b>OHN</b>	6		3	9
<b>OSE</b>	9		15	24
<b>Graduates</b>				
	<b>MPH</b>	<b>MS</b>	<b>PhD</b>	<b>Total</b>
<b>IH</b>	4	1	2	7
<b>HSAT</b>	3			3
<b>OE</b>			1	1
<b>OHN</b>	1			1
<b>OSE</b>		6		6

During the 2008-2009 reporting year, the academic programs within the Center enrolled 73 students (38 Masters students and 35 doctoral students) and graduated 18 students (15 Masters and 3 Doctoral students). Among the 20 graduates, 14 entered positions in occupational and environmental health and organizations around the world, 4 of the Masters students entered doctoral programs, 1 PhD student entered a postdoctoral fellowship program.

During the reporting year, 668 people attended continuing education programs sponsored by the Center, accounting for 3186 person-days of training. A wide range and large number of outreach activities were undertaken by individual UM ERC faculty and staff, such as curriculum and research assistance to other academic institutions, professional consultation to a range of organizations, presentations to various

groups, and publication of seminars on websites open to the public.

During the reporting year funding was provided for six PPRT projects. These projects included:

- A Gene-Environment Study of Mercury with the American Dental Association (ADA) Cohort
- Occupational Noise Exposure Using Job-Exposure Matrices and Hearing Loss
- The Effect of Flooring Surface on Discomfort and Behavior During Prolonged Standing
- Development of a Biomechanical Model of Hand/Handhold Coupling
- Ergonomics and Radiation Exposure in a Nuclear Pharmacy
- Feasibility of Determining Workplace Microbial VOCs with a Microfabricated Gas Chromatograph

**Student awards, recognition, and accomplishments**

- Two American Industrial Hygiene Foundation scholarships and one 3M Scholarship were awarded to students in industrial hygiene.
- Two IH students received best posters awards at the AIHCE in Toronto in June 2009.
- Two students in OE received NORA doctoral scholarships

**Development of Curricula, Courses, Teaching and Reference Materials**

- **NP-OHN Concentration.** The School of Nursing successfully launched a new Nurse Practitioner-Occupational Health Nursing (NP-OHN) Concentration with 5 students enrolled in its first year of the existence.
- **Interdisciplinary projects course, EHS 600 Professional Perspectives in Environmental Health.** Both OSE and OHN students are now participating in this course which affords interdisciplinary teams of students the opportunity to integrate academic principles, research findings, practical skills, and concepts in occupational health in solving real-world, practical problems.
- **Redesign of the industrial hygiene curriculum.** To expand the scope and modernize the content of the curriculum IH students will enroll in a program in Exposure Science, which will integrate courses currently in the IH Program with new courses addressing sustainability, genetics and epigenetics, life cycle analysis, and occupational epidemiology.

## Other Major Developments and Progress

- **Targeted Research Training Program.** During the 2008-2009 reporting period, the TRT program served to enhance our research training through a number of activities and mechanisms. Enhancements include:
  - **Funding of a TRT multiyear pre-doctoral scholarship.** Two outstanding applicants were awarded TRT scholarships and entered our doctoral programs.
  - **Sponsorship of conferences and symposia.** A UM sponsored NORA Symposium was delivered at the Michigan Safety Conference free of charge to the regional audience.
  - **Launch of hazards of skilled trades initiative .** This initiative, jointly supported by the United Automobile Workers and Ford Motor Company, is identifying systemic root causes and workplace cultural influences that contribute to increased risk for severe injury or death due to acute trauma among the skilled trades workers, and testing interventions to ameliorate these conditions.
- **International Occupational Health and Safety.** **Dr. Batterman** assisted the Ministry of Health in Mozambique in addressing health and safety issues in medical waste management, including the development of a National Plan and equipping hospitals with appropriate waste disposal systems and management capability. He provided an assessment, training at a national meeting, and helped to specify and select appropriate waste management and infection control systems. **Dr. Robins** served as Project Director of a Fogarty International Center grant with a focus on occupational health and safety in Southern Africa.